

ABSTRACT

Disclosed is a free flowing dry back-up material which comprises:

- from 67 to 96% by weight of fly-ash;
- 5 - from 2 to 15% by weight of a heat sensitive binder such as boric acid;
- from 2 to 7% by weight of a non-wetting agent such as calcium fluoride;
- 10 - from 0 to 10% by weight of a heat expandable material, viz. a material expandable as a function of the temperature such as vermiculite or graphite; and
- from 0 to 1% by weight of a dust suppressant such as kerosene.

15 This material which is useful in particular in the aluminum industry has the advantages of being water free and free flowing, such avoiding the use of vibrator to position it into a shell. It also has a low density and a low thermal conductivity. Moreover, it is organic free as compared to the existing materials which use an organic binder to ensure a low temperature set; and it sets at a temperature lower than 400°F.